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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,804	02/20/2004	Young-Hun Joo	5000-1-526	7185

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CHA & REITER, LLC
210 ROUTE 4 EAST STE 103
PARAMUS, NJ 07652

EXAMINER

LEUNG, WAI LUN

ART UNIT PAPER NUMBER

2613

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.		Applicant(s)	
	10/783,804		JOO ET AL.	
	Examiner		Art Unit	
	Danny Wai Lun Leung		2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20050124</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The disclosure is objected to because of the following informalities:

On page 2, line 5 of the specification, a term "VOD" is used without clarifying what the abbreviation stands for, similarly, on page 6, line 18, an abbreviated term "PHY" is used without further clarification.

In the event that these abbreviations are use of trademarks, it should be noted in the application, and should be capitalized wherever it appears and be accompanied by the generic terminology. Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

Claim Objections

3. Claim 6 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 6 appears to be dependent upon claim 6, such dependency is improper. Claim 6 is not an independent claim, as fee record dated 2/20/2004 indicates that only 1 independent

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claim (claim 1) is currently being filed. It is unclear which claim is claim 6 depended upon.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 4-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 4 recites the limitation "the server computer" on page 14, line 5-6. There is insufficient antecedent basis for this limitation in the claim.

7. Claim 5 the limitation "the TDDM" on page 14, lines 9-10; this abbreviation is not clearly explained as to what it stands for. There is insufficient antecedent basis for this limitation in the claim.

8. In claim 6, the limitation "the subscriber bi-directional optical receiver" on page 14, lines 12-13, along with numerous other limitations such as "the communication data" "the demultiplexer", "the subscriber computer", lacks antecedent basis in the claim. Furthermore, abbreviations such as "PHY", "MII", TX" are not clearly explained as to what they stands for. There are insufficient antecedent basis for such limitation in the claim.

9. Claim 9 recites the limitation "MLT-3 signal" on page 15, line 22; this abbreviation is not clearly explained as to what it stands for. There is insufficient antecedent basis for this limitation in the claim.

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10. Claim 10 recites the limitation "the TDM" on page 16, lines 1-2; this abbreviation is not clearly explained as to what it stands for. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by **Bohn et al.** (US005311344A).

Regarding to claim 1, **Bohn** discloses an optical subscriber network system (*fig 1*) comprising:

a server bi-directional optical transmitter (2, *fig 1*) including

a multiplexer (22, *fig 1*) to multiplexes communication data and broadcast data (*col 3, ln 12-23*),

a server laser diode (23, *fig 1*) to converts the multiplexed data into an optical signal (*col 3, ln 16-23*), and

a server photo diode (24, *fig 1*) receive communication data from a subscriber (5, *fig 1*),

wherein the server bi-directional optical transmitter transmits the upstream communication data (*col 2, ln 47-49 defined inbound service as upstream traffic; col 3, ln*

57-61 described the discriminator 28 in the headend output this inbound service, which is an upstream traffic); and

a subscriber bi-directional optical receiver (subscriber terminal 51, fig 1; also shown in fig 2) including

a subscriber laser diode (55, fig 2) to transmit upstream communication data (col 4, ln 33-35),

a subscriber photo diode (photodetector 52, fig 2) to receive the optical signal transmitted from the server bi-directional optical transmitter (col 4, ln 19-25), and

a demultiplexer (54, fig 2) to demultiplex and divide the multiplexed signal into communication data and broadcast data (col 4, ln 28-32).

As to claim 2, **Bohn** further teaches wherein the multiplexer and demultiplexer are a time division multiplexer and demultiplexer, respectively (col 3, ln 13-14; col 4, ln 28-30).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. Claims 1-5, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bohn et al.** (*US005311344A*), in view of **Farmer** (*US007146104B2*).

Regarding claims 3 and 4, **Bohn** discloses the optical subscriber network system as discussed above regarding claims 1 and 2, **Bohn** does not disclose expressly wherein the communication data is received from a server computer, and wherein the server bi-directional optical transmitter transmits the upstream communication data to the server computer.

Farmer, from the same field of endeavor, teaches an optical subscriber network system (*fig 7*), wherein the communication data is received from a server computer (*608, fig 7; col 22, ln 41-49*), and wherein the server bi-directional optical transmitter transmits the upstream communication data to the server computer (*col 22, ln 41-46*).

Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to use **Bohn**'s server bi-directional optical transmitter to transmit the upstream communication data to a server computer, as suggested by **Farmer**, such that it receive communication data from a server computer in **Bohn**'s system. The motivation for doing so would have been to be able to support digital contention network protocols such as Ethernet formatted packets (*Farmer, col 3, ln 13-20*).

As to claim 5, **Bohn** further teaches wherein the subscriber bi-directional optical receiver providing the communication data divided by a TDDM (*col 4, ln 28-30*), **Bohn** does not disclose

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expressly having a subscriber-side computer. **Farmer**, from the same field of endeavor, teaches a subscriber bi-directional optical receiver providing communication data to a subscriber-side computer, and the data can be received at various time (*col 28, ln 40-53*).

Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to provide communication data to a subscriber-side computer using **Bohn's** subscriber bi-directional optical receiver providing the communication data divided by a TDDM, as suggested by **Farmer**. The motivation for doing so would have been to be able to utilize data transmitted via digital contention network protocols such as Ethernet formatted packets by using a subscriber-side computer (*Farmer, col 3, ln 13-20*).

As to claim 10, **Bohn** further teaches wherein the TDM inserts a plurality of broadcast data streams and communication data into time slots and generates time slot frames (*col 4, ln 19-22*).

16. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bohn et al.** (*US005311344A*), in view of **Farmer** (*US007146104B2*), as applied to claim 5 above, and further in view of **Yamada et al.** (*US 20020118413A1*).

Regarding claim 7, **the combination of Bohn and Farmer** discloses the system in accordance to claim 5 as discussed above. **It** does not disclose expressly wherein the server bi-directional optical transmitter comprises: a first PHY to convert the communication data received by the server photo diode into a MII signal; and an Ethernet switch to transmit the MII signal to

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the server computer and provide the communication data from the server computer to the multiplexer.

Yamada, from the same field of endeavor, teaches a server bi-directional optical transmitter (80, *fig 2*) comprises: a first PHY (33, *fig 2*) to convert the communication data received by the server photo diode (35, *fig 2*) into a MII signal (*MII 32, fig 2*); and an Ethernet switch (31, *fig 2*) to transmit the MII signal to a server computer (60, *fig 2*).

Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to implement a first PHY to convert the communication data received by the server photo diode into a MII signal; and an Ethernet switch to transmit the MII signal to the server computer onto **the combination of Bohn and Farmer's** system as suggested by **Yamada**, such that communication data are provided from **Farmer's** server computer to **Bohn's** multiplexer. The motivation for doing so would have been to simplify the data transmission structure by converting data into MII signals.

Regarding claim 8, **the combination of Bohn and Farmer** discloses the system in accordance to claim 5 as discussed above. **Farmer** further teaches wherein the subscriber bi-directional optical receiver comprises: an Ethernet switch (566B, *fig 7*) to (1) switch the communication data to a subscriber-side computer (*col 18, ln 36-50*), and (2) receive the communication data from the subscriber computer (*col 18, ln 36-38*). **The combination of Bohn and Farmer** does not disclose expressly having a third PHY coupled to the demultiplexer to convert the communication data with a MII type into a TX signal for the Ethernet switch, and

convert a MII signal from the Ethernet switch into a TX signal for the subscriber laser diode, wherein, the TX signal from the Ethernet switch is used to operate the third PHY.

Yamada, from the same field of endeavor, teaches a subscriber bi-directional optical receiver (70, *fig 2*), comprising: a third PHY (11, *fig 2*) for converting the communication data with a MII type (12, *fig 2*) into a TX signal for Ethernet (100, *fig 2*), and convert a MII signal from the Ethernet into a TX signal for the subscriber laser diode, wherein, the TX signal from the Ethernet is used to operate the third PHY (*paragraph 34*).

Therefore, it would have been obvious for a person of ordinary skill in the art at the time of invention to use **Farmer's** Ethernet switch to (1) switch the communication data from **Bohn's** demultiplexer to a subscriber-side computer, and (2) receive the communication data from the subscriber computer, in the combination of **Bohn and Farmer's** subscriber bi-directional optical receiver; and apply a third PHY coupled to **Bohn's** demultiplexer to convert the communication data with a MII type into a TX signal for the Ethernet switch, and convert a MII signal from the Ethernet switch into a TX signal for the subscriber laser diode, wherein, the TX signal from the Ethernet switch is used to operate the third PHY onto **the combination of Bohn and Farmer's** system as suggested by **Yamada**. The motivation for doing so would have been to simplify the data transmission structure by converting data into MII signals.

As to claim 9, **Yamada** further teaches wherein the first PHY (33, *fig 2*) converts a 100 Base-T optical fiber signal into a MII signal, and the second PHY (31, *fig 2*) converts a MII signal into a MLT-3 signal (*paragraph 22*). It would have been obvious to combine **Bohn, Farmer, and Yamada** for the same reason as stated above.

As to claim 6, as it is best understood in view of the above 112 problem, claim 6 is rejected for the same reasons as stated above regarding claim 8, because in addition to the limitations in claim 8, **Yamada** further teaches wherein the subscriber bi-directional optical receiver comprises a fourth PHY (15, fig 2) to convert the TX signal into a MII signal (12, fig 2), and to convert a MII signal to a TX signal for the subscriber laser diode (16, fig 2). It would have been obvious to apply **Yamada's** teaching onto **the combination of Bohn and Farmer's** system for the same reason as stated regarding claim 8.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Wai Lun Leung whose telephone number is (571) 272-5504. The examiner can normally be reached on 9:30am-9:00pm Mon-Thur.

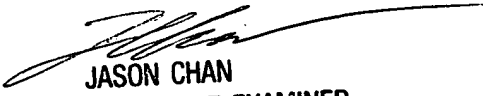
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DWL

January 26, 2007


JASON CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600